

ABSTRACT

A visor display apparatus for is supported on the head of a user, preferably on a helmet on the user's head. The apparatus comprises a support structure supported on the head of a user and supporting a viewing portion facing one of the eyes of the user. The apparatus also includes a housing supporting therein an image display system. The image display system has three LEDs generating light, being red, green and blue. Plastic optical fibers are bonded to the LEDs and receive light from the LEDs, combining the three colors of light in a single output. A reflective display receives image data and forms an image therefrom. The output of the optical fibers transmits the light to the reflective display so that the light received from the LED is reflected by the reflective display to project the image. The apparatus further has optics receiving the projected image from the reflective display and transmitting said image to the viewing portion so as to be viewed by the user. A polarizing structure positioned intermediate the optical fiber and the reflective display permits passage of light therethrough having a first polarity and reflects light of the orthogonal polarity. The light from the optical fiber strikes the polarizing structure both before and after the light strikes the reflective display. In one instance the light is reflected by the polarizing structure and in the other instance the polarizing structure permits passage of light therethrough.